

Global Micronutrient Laboratory Program

Public Health Problem

- Nearly one-third of the world's population suffers from deficiencies in micronutrients such as iodine, iron, vitamin A, zinc, and folate.
- These deficiencies result in reduced mental and physical development among children, poor pregnancy outcomes, decreased work capacity of adults, and increased illness and premature death.
- In developed countries, simple, cost-effective interventions are available to treat these deficiencies. However, in developing nations, lack of integrated strategies and appropriate analytical technology to assess micronutrient status hamper efforts to eliminate micronutrient malnutrition.



CDC Laboratory Response

- In 2000, CDC established the Global Micronutrient Laboratory Program. The goal of the program is to apply laboratory science to eliminate micronutrient malnutrition worldwide.
- The laboratory's goals are as follows:
 - Build laboratory capacity through technical support, training, and technology transfer.
 - Support the development of "field-friendly" technologies.
 - Develop reference methods and materials as an accuracy base.
- Thus far, the program has been involved in these activities:
 - Conducted interlaboratory comparison studies for urinary iodine and folate in whole blood and serum. Currently conducting a similar study of iron overload.
 - Developed reference methods and urine reference materials for iodine. Continuing development of a reference method for serum and whole blood folate.
 - Developed and implemented the Ensuring the Quality of Iodine Procedures (EQUIP) program, an international quality assurance program. Currently 30 laboratories from 20 countries participate in EQUIP.
 - Worked with the United Nations International Children's Emergency Fund, the World Health Organization, and nongovernmental



organizations to establish an international iodine laboratory network.

- Awarded funds to four grantees to develop new technologies to assess nutritional status.
- Evaluated and improved low-technology methods for assessing nutritional status that are appropriate for developing countries.
- Provided technical support for several studies.

Public Health Impact

Analyzing indicators of micronutrient status helps assess the extent of the problem. These analyses help target and monitor program interventions and play a key role in CDC's efforts to eliminate micronutrient malnutrition.

Future Plans

The CDC Global Micronutrient Laboratory Program plans to expand its quality assurance services to other nutritional indicators, such as vitamin A and folate. The program will also focus on developing low-technology and field-friendly methods for assessing nutritional status.

Questions or Comments

<http://www2.cdc.gov/nceh/contactnceh/frmSubmit.asp>

The Centers for Disease Control and Prevention (CDC) protects people's health and safety by preventing and controlling diseases and injuries; enhances health decisions by providing credible information on critical health issues; and promotes healthy living through strong partnerships with local, national, and international organizations.

August 2001

NCEH Pub. No. 01-0216